

GNFAC Avalanche Advisory for Sat Dec 17, 2011

Good morning. This is Mark Staples with the Gallatin National Forest Avalanche Advisory issued on Saturday, December 17 at 7:30 a.m. This advisory is sponsored by the Montana FWP Recreation Trails Grant in partnership with the Friends of the Avalanche Center. This advisory does not apply to operating ski areas.

Mountain Weather

This morning temperatures were near 20 degrees F except near Cooke City and West Yellowstone where temperatures were near 10 degrees F. Winds this morning varied across the region blowing from all directions on the western half of the compass. At ridgetops near Bridger and Hyalite Canyon winds were blowing 20-40 mph, near Big Sky 5-15 mph, and further south near West Yellowstone and Cooke City 5-10 mph. No snow fell overnight and none is expected today which will have mostly sunny skies and temperatures approaching 32 degrees F. Westerly winds will blow 10-20 mph.

Curious why La Nina hasn't brought more snow to SW Montana? Read a brief explanation from the National Weather Service office in Missoula [here](#).

Snowpack and Avalanche Discussion

The Bridger, Gallatin and Madison Ranges, the Lionhead area near West Yellowstone and mountains around Cooke City:

The snowpack is weak in most places especially where it is less than 2 ft deep ([video](#)). Near West Yellowstone yesterday during an avalanche class, Eric found a snowpack that is one big weak layer containing depth hoar, near-surface facets, and surface hoar. Similar conditions can be found in many other areas. The missing ingredient for an avalanche in these areas is a slab.

Some places have a slab on top of the snowpack. Near Beehive Basin yesterday, skiers found a recent human triggered avalanche about 8 inches deep and 10 feet wide. This avalanche slid on weak faceted crystals that formed on the snow surface prior to Wednesday's snowfall ([photo](#)). While most areas only received a few inches from that storm, upper parts of Lone Mountain received 8-12 inches. Watch for isolated areas with this much new snow OR places with wind deposited snow. These areas have a slab that can produce human triggered avalanches.

Other places have a slab in the middle of the snowpack. The mountains near Cooke City and Hyalite Canyon ([video](#)) have a snowpack with depth hoar crystals near the ground, a slab in the middle, and more facets on top. In these places the snowpack has not been stressed with significant snowfall. (What is significant snowfall? See note below.) In areas like these, the snowpack has all the ingredients for an avalanche. While human triggered avalanches are not likely, they remain possible.

Today, slopes with a snowpack deeper than 2 ft have a slab and a weak layer present making human triggered avalanche possible. These slopes or any with wind deposited snow have a [MODERATE](#) avalanche danger. Slopes without wind deposited snow and a shallow snowpack less than 2 ft do not have a slab to make an avalanche. These slopes have a [LOW](#) avalanche danger.

What is significant snowfall? When assessing stability we care how much weight was added to the snowpack. Because some snow is wet and heavy and other snow is light and fluffy, we focus on the amount of

water contained in this snow. The measurement is called snow water equivalent ([SWE](#)). It is how much water you would have if you melted the snow. Luckily an extensive network of remote [SNOTEL sites](#) measures SWE. During winter in Montana 1 inch of SWE usually means about 1 foot of snow, and this is a significant amount if it falls in less than 24 hours. With such a weak snowpack right now, even a ½ inch of SWE falling overnight would be concerning.

Doug will issue the next advisory tomorrow morning at 7:30 a.m. If you have any snowpack or avalanche observations, drop us a line at mtavalanche@gmail.com or call us at 587-6984.

EVENTS/EDUCATION

To check out all our education programs: <http://www.mtavalanche.com/workshops/calendar>

BOZEMAN

[Women's 1-hour Avalanche Awareness Lecture](#). Wednesday, January 4, 6:30- 8 p.m. at REI.

[Snowmobiler Introduction to Avalanches with Field Course](#). Lectures on Saturday, January 7, with an all day field session Sunday, January 8. Advanced registration IS REQUIRED.

CODY, WYOMING

[Snowmobiler Introduction to Avalanches with Field Course](#). Lectures on Saturday, January 14 at Mountain Valley Motorsports with an all day field session near Cooke City on Sunday, January 15. Advanced registration IS REQUIRED.